Effects of Focus Type and Argument Length on the Dative Alternation

Mary Byram and Maria Luisa Zubizarreta
byram@usc.edu
University of Southern California

1. Introduction[1]:

The arguments of English double object verbs can appear in the *dative form* with the indirect object preceding the direct object (e.g. "Give the sailor the cup.") or the *PP-frame* with the direct object preceding the indirect object (e.g. "Give the cup to the sailor.") [[also mention heavy NP shift, as these are not the only options?]]. A third option, heavy NP shift (e.g. "Give the cup to the sailor."), also exists, but this study will not be examining it. Constructions with flexible word order have attracted attention in existing psycholinguistic research on language production (see e.g. Ferreira 1996, Wasow and Arnold 2003, Hawkins 1994), as researchers have investigated what influences the likelihood of a speaker producing one form rather than the other. One of the factors that has repeatedly been shown to influence argument ordering in English double object constructions is the relative weight/length of the two arguments: Heavier arguments tend to occur last: (Hawkins 1994, Arnold et al 2000, Wasow 1997). In addition, Arnold et al 2000 found, in a picture-description experiment, that focused arguments also tend to occur last, but did not distinguish information focus (new/old) and contrastive focus (corrective or picked from a set) (see e.g. É Kiss 1998). Wasow and Arnold 2003, Arnold et al 2000, É Kiss 1998, and Siewierska 1993 also showed that focus influences word order. We conducted two production studies to test **(i)** whether word order variation in English double object constructions is sensitive to information focus and/or contrastive focus, and **(ii)** whether and how effects of weight interact with effects of focus in guiding choice of word order.

2. Design, procedure:

As part of a language production task, participants (n=16 for both experiments) were presented with a series of boxes on a computer screen and made to believe that they had a partner in the other room with whom they could communicate through the computer and a set of headphones. The partner was in fact pre-recorded, but was included in order to prompt responses that would be more natural than if the participant were simply talking to a computer. The participants were told that it was their task to instruct their partner how to move the boxes on the screen. The participant's pretend 'partner' would read everything on the computer screen aloud, then ask a prompt question (see ex.(1 and 2)). The participant would respond by producing imperative sentences using the verb "give" (e.g. 'Give the cup to the sailor' or 'Give the sailor the cup.'). We looked at what proportion of answers used dative forms ("Give the sailor the cup") vs. PP-frames ("Give the cup to the sailor"). We manipulated *focus type* (contrastive focus/information focus) and *focused argument* (theme/recipient) in both experiments. In **Experiment 1,** the *weight of the theme* (heavy/light) was manipulated, and in **Experiment 2**, the *weight of the recipient* (heavy/light) was manipulated. This was done because we wanted to investigate whether there are any asymmetries in how the weight of these two arguments affect the ordering patterns.

2.1 Focus type was manipulated in both experiments by changing the initial computer screen that the participant saw. Fig. 1 shows a screen image for an information focus trial, and Fig. 2 shows a screen image for a contrastive focus trial. In *information focus trials*, only one item (either the theme or the recipient) appears initially on the computer screen. The second item

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appears only after the 'partner' has asked about it with the prompt question (ex.(1)). Thus, for information focus trials, the focus status of one of the arguments was marked by the question-answer pair and by newness. In *contrastive focus trials*, the focused item (either the theme or the recipient), appeared in a list of three items depicted in a series of boxes on one side of the screen. The other two object names were chosen to be orthographically and phonologically (counting by syllables) maximally comparable to the target item. The 'partner' lists all items on the screen, then the target item appears in white. The target item appears in white before the prompt question (ex. (2)) so that the participant knows the answer to the prompt question before it is asked. This is to mitigate the effect of the question/answer pair. he 'partner' asks a prompt question (ex.(2)), then the participant responds with a command (e.g. "Give the sailor the cup." or "Give the cup to the sailor."). However, in contrastive focus trials, initially, the wrong box moves (ex: 'rag' moves when the participant said "Give the sailor the cup."), and the participant must correct their partner by restating the command. Thus, for contrastive focus trials, the contrastive focus status of one of the arguments was signaled by the question-answer pair, by picking out of a set, and by correction.

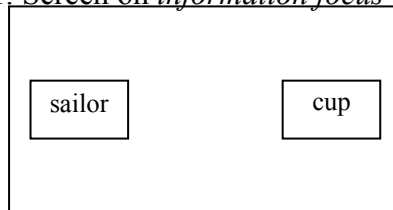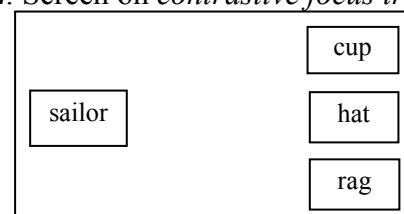**Fig. 1**: Screen on *information focus trials*.

| sailor | | cup |

Fig. 2: Screen on *contrastive focus trials*.

	cup
sailor	hat
	rag

(1) Information-focus PROMPT:
(a) There's the sailor. What should the sailor get? [theme-focus]
(b) There's the cup. Who should get the cup? [recipient-focus]

(2) Contrastive-focus PROMPT:
(a) There's the cup, the hat, the rag, and the sailor. What should the sailor get? [theme-focus]
(b) There's the sailor, the artist, and the diver. Who should get the cup? [recipient-focus]

2.2 Focused Argument was manipulated by focusing either the theme or the recipient. For information focus trials, the focused item didn't appear until after the prompt question. For contrastive focus trials, the focused item appeared in a set of three items.

2.3 Weight was manipulated by using a relative clause to make an item heavy (added to the theme in Experiment 1 and to the recipient in Experiment 2) so that heaviness was defined both phonologically and syntactically. Light recipients and themes were one or two syllable common nouns.

(3a) SHORT THEME: the cup   (3b) LONG THEME: the cup that is filled with juice
(4a) SHORT RECIPIENT: the sailor (4b) LONG RECIPIENT: the sailor who enjoys writing

3. Results[2]:

3.1 Focus Type: Participants did not produce significantly more dative forms in the information focus trials than in the contrastive focus trials nor in the contrastive focus trials than in the information focus trials. This indicates that information focus and contrastive focus did not behave significantly different in either experiment.

Focus Type:[3]

Exp. 1	percentage of utterances in a dative form
contrastive focus	52%
information focus	58%

Exp. 2	percentage of utterances in a dative form
contrastive focus	50%
information focus	53%

3.2 Focused Argument: In both experiments, participants produced significantly more dative forms (e.g. "Give the sailor the cup.") when the theme was focused than when the recipient was focused. This indicates a preference for having a focused item on the sentence boundary, regardless of focus type.

Focused Argument:

Exp. 1	percentage of utterances in a dative form*
theme was focused	63%
recipient was focused	48%

Exp. 2	percentage of utterances in a dative form*
theme was focused	65%
recipient was focused	37%

3.3 Weight: In Exp. 1, participants produced significantly more dative forms when the theme was heavy (i.e., put the heavy item on the sentence boundary) than when the theme was light. However, in Exp. 2, participants did not produce significantly more dative forms when the recipient was heavy than when it was light. This may indicate that an asymmetry exists between the sensitivity of themes versus recipients to weight effects in the English dative construction.

Weight:

Exp. 1	percentage of utterances in a dative form*
theme was light	50%
theme was heavy	60%

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[2] Any trials where the participant did not produce a dative form or a PP-frame, did produce a pronoun, or did not produce a sentence with "give" were excluded from the experiments. These instances were rare.

[3] The asterisk '*' indicates that the proportion of datives in condition differs significantly from the proportion of datives in the other condition at the $p < .05$ level.

Exp. 2	percentage of utterances in a dative form
recipient was light	59%
recipient was heavy	48%

4. Conclusions:

Our results suggest that focus is a motivator of word order. A focused item, whether a theme or recipient, light or heavy, was significantly more likely to appear sentence finally. Furthermore, weight was only a significant factor in Exp. 1 where the weight of the theme was manipulated. This may suggest an interesting asymmetry between how weight influences the theme versus the recipient in the English dative alternation, but also it suggests that focus is an independent determiner of word order. It may be then that some findings that weight is a factor in deciding word order need to be reevaluated to be sure that focus was not a confound. At the very least, theories of word order need to account for focus in addition to weight.

Our results also suggest that focus in English may be a uniform phenomenon not having different types. Both information focused and contrastively focused items appeared on the sentence boundary, and no significant difference was found between the two.

References:

Anttila, Arto. 2007. Variation and optionality. In: Paul de Lacy, ed., *The Cambridge Handbook of Phonology*. Cambridge: Cambridge University Press: 519-536.

Arnold, Wasow, Losongco, Ginstrom. 2000. Heaviness vs. newness: the effects of complexity and information structure on constituent ordering. *Language* 76: 28-55.

Barss and Lasnik. 1986. A note on anaphora and the double objects. *Linguistic Inquiry* 17: 347-354.

Ferreira. 1996. Is it better to give than to donate? Syntactic flexibility in language production. *Journal of Memory and Language* 35: 724-755.

Hawkins. 1994. *A performance theory of order and constituency*. Cambridge.

É Kiss. 1998. Identificational focus versus information focus. *Language*.

Larson. 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.

Oehrle. 1975. *The Grammatical Status of the English Dative Alternation*. Ph.D. dissertation. Cambridge, Massachusetts Institute of Technology.

Siewierska. 1993. Syntactic weight vs information structure and word order variation in Polish. *Journal of Linguistics* 29: 392-417.

Takano. 1998. Object shift and scrambling. *Natural Language and Linguistic Theory* 16(4): 817-889.

Wasow. 1997. Remarks on grammatical weight. *Language Variation and Change*.

Wasow and Arnold. 2003. Post-verbal constituent ordering in English. In: Günther Rohdenburd and Britta Mondorf (eds) *Determinants of Grammatical Variation in English*. Walter de Gruyter: 119-154.